

Explore Hitachi's World of Automation

Powerful Features and Efficiency

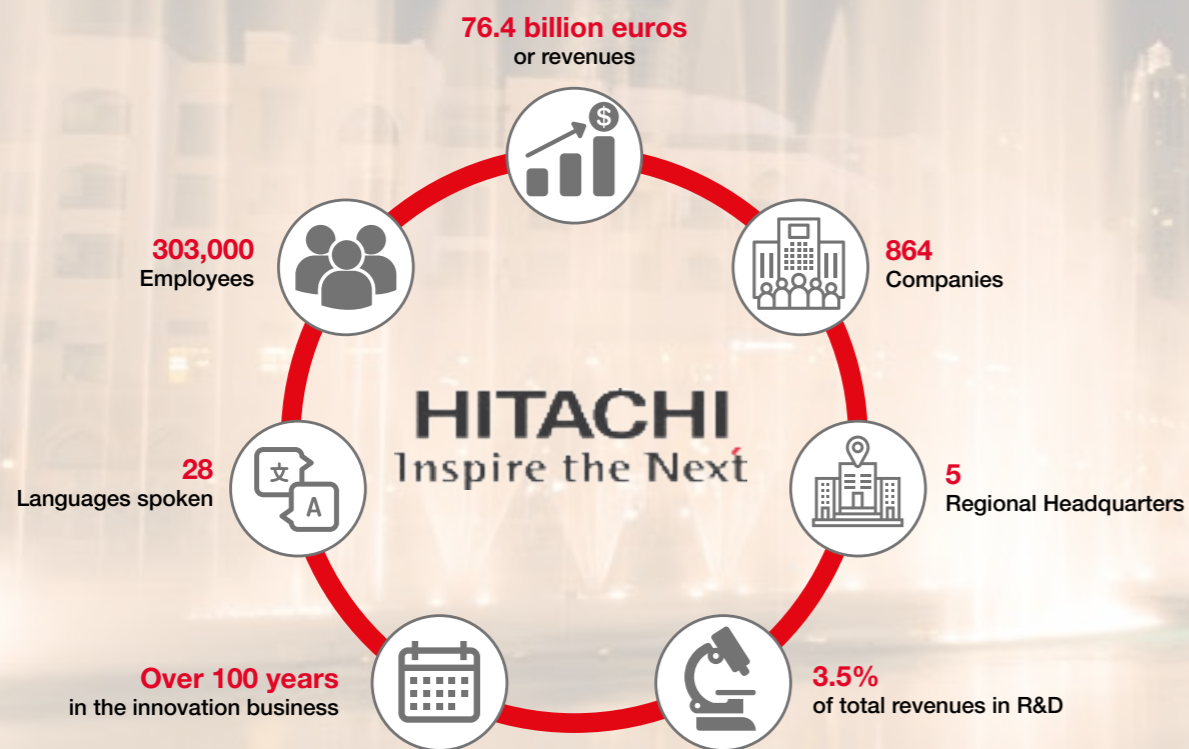


Discover Hitachi

In 1910, Hitachi was founded as a mining machinery repair shop. At a time when Japan was relying on imported products and technology, one team chose to rely on a different resource – themselves.

With unrelenting effort and enduring passion, the team created, developed and delivered original products and technologies.

GLOBAL KEY FIGURES



Source: The European House – Ambrosetti elaboration on Hitachi data, 2017

Hitachi's World of Automation

The Hitachi Group in Europe is a leading global technology and engineering conglomerate. Founded in Japan in 1910, Hitachi has grown to become a well recognised and well respected global industrial brand with more than 100 years experience in motor-related business.

Our mission is to rapidly grasp the changes in society and support our customers with all our strength, with creativity and flexible ideas around the world.

We will keep on pushing forward to the next challenge, to provide our customers with products and services that deliver high added value and meet their needs.

Hitachi products are renowned for being extremely reliable. All functional parts are manufactured in-house.

As with all Hitachi products, quality and reliability are its main USPs (Unique Selling Points), as well as its low TCO (Total Cost of Ownership). Environmental considerations are also of core importance, and Hitachi continuously strives to provide more efficient, environmentally sound solutions.

Have a look at Hitachi partners and softwares:



NE-S1 Series

The Hitachi NE-S1 is our economical and simple to use inverter solution in the popular 0.2 kW to 4.0 kW range. The NE-S1 is designed with both OEM's and System Integrators needs in mind, with its ultra-compact design and out of the box integration in most applications.



HIGHLIGHTS

- Side by side installation to save panel space
- RS-485 Modbus RTU standard
- Energy saving function standard
- Keypad/Terminal switching
- Pre-configured Parameters
- 3 wire Start Stop compatible
- PID, Logic and time delay functions built in
- Arithmetic operation and delay functions
- 2nd motor function
- Analog input disconnection detect function
- CE/UL/c-Tick approvals
- Optional door mounted operator display
- Sink or source input compatible
- Energy saving function

Applications

Optimal performance for energy saving applications such as fans and pumps

Fans and air conditioners

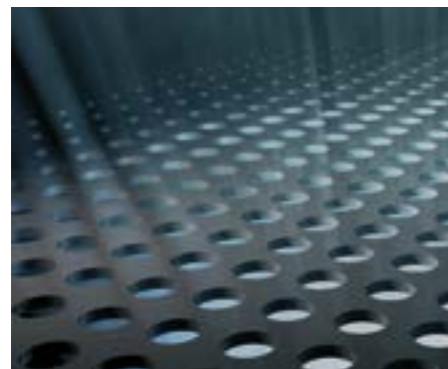
- Air conditioning systems
- Fans and blowers
- Clean rooms

Pumps

- Water and washwater pump systems
- Tankless water supply and drainage systems

Food Processing Machines

- Slicers
- Mixers
- Confectionary machines
- Fruit sorters



Technical Information

Model Line-up

Applicable motor kW	0.2	0.4	0.75	1.5	2.2	4.0
1-phase 200V	SBE	●	●	●	●	●
3-phase 400V	HBE		●	●	●	●

Model Name Indication

NES1 - 002 S BE

Series name | NES1 - 002 | S | BE
 Applicable motor capacity
 002: 0.2kW - 040: 4.0kW
 E: European version
 B: Without keypad
 Power Source
 S: 1-phase 200V class
 H: 3-phase 400V class



Global standards

- Conformity to global standards
CE, UL, c-UL, c-Tick approvals.
- Sink / source logic is standard
Logic input and output terminals can be configured for sink or source logic.
- Wide input power voltage range
Input voltage of 240 V for 200 V class and 480 V for 400 V class as standard.

WL200 / WJ200 Series

With our WL200/WJ200 Series we present a generation of compact inverters, ideally suited for a variety of applications — designed for excellent performance and user friendliness.



Side by side installation (with no space between them)

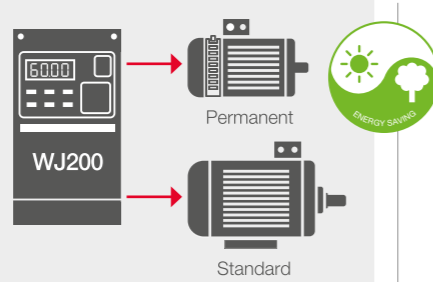
HIGHLIGHTS

- EzCOM (peer to peer communication) using RS485
- Direct communication with HMI
- Best quality and reliability
- Very good standard equipment
- Easy to setup and operate (Mini USB port)
- WOP LCD operator (optional)
- Integrated safety
- Safety stop function (WJ200) (ISO13849-1 category 3 / IEC60204-1 STOP category 0)
- Side by side installation (with no space between them)
- Energy saving
- Easy handling and maintenance
- Additional functionality WJ200
- Easy wiring (control terminals screw-less)
- Build in BRD circuit (resistor optional)
- Online monitoring of all parameters and I/O terminal status
- Parameter conversation between different series

WJ200 Special Functions

Induction motor & permanent magnet motor* with one inverter series

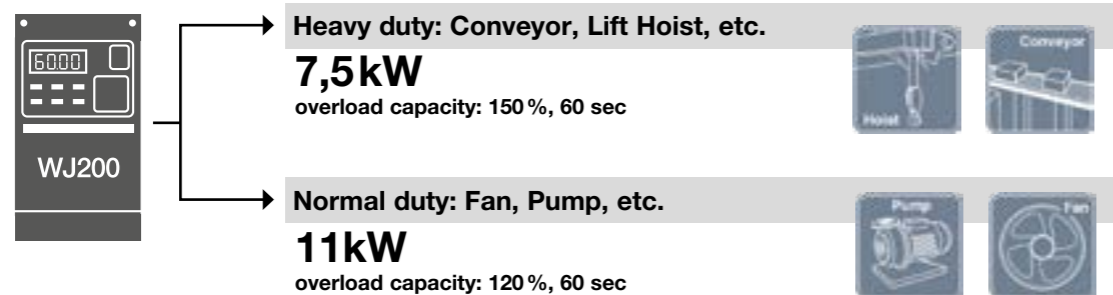
*The permanent magnet motor control function is only suitable for variable torque applications such as fan and pump.



High starting torque of 200 % or greater achieved using sensorless vector control (when sized for heavy duty)



Dual rating



General Information

Network compatibility & external ports

The WL200 / WJ200 Series is particularly suitable for easy integration into various networks using optional fieldbus modules.

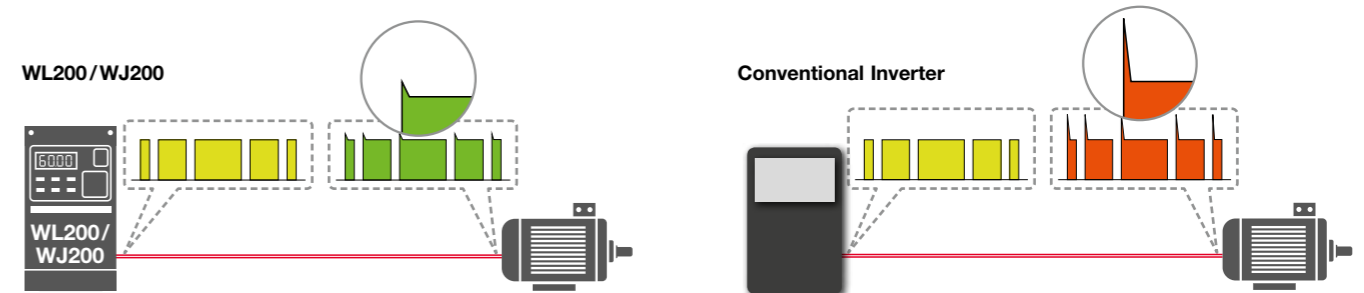
- RS485-Modbus (Built-in)
- RS422 port (Built-in)
- DeviceNet
- Profibus-DP
- PROFINET
- EtherCAT



One network expansion card can be installed inside the inverter.

Micro surge voltage suppress function

Hitachi original PWM control method limits motor terminal voltage to less than twice inverter DC bus voltage. This system significantly protects the life of the electric motor.



SJ-P1 Series

The new SJ Series, Type P1 is at the cutting edge of technology for premium inverters. Highly flexible, it is suitable for a wide variety of demanding applications. SJ-P1 has premium drive characteristics to achieve instantaneous force and efficient operation.



HIGHLIGHTS

- PID sleep mode function and loss of pressure function
- PID, Logic and time delay functions built in
- EzCOM for drive to drive master-less communications
- PM/IM motor compatible
- RS-485 Modbus RTU standard
- Arithmetic operation and delay functions
- User friendly display
- Heat sink extraction (easy to place the cooling to the outside)
- Starting torque 200% at 0.3Hz
- Main power 380Vac to 500Vac
- RoHS compliant
- Improved efficiency with 24V DC supply
- Error codes in text
- Analog input disconnection detect function
- CE/UL/cUL/c-Tick approvals
- 10-year MTBF life design
- Loss of signal protection
- Build in LCD color operator
- Multilanguage (12 languages)
- Multi-rating to support space and cost savings
- Trip avoidance functions

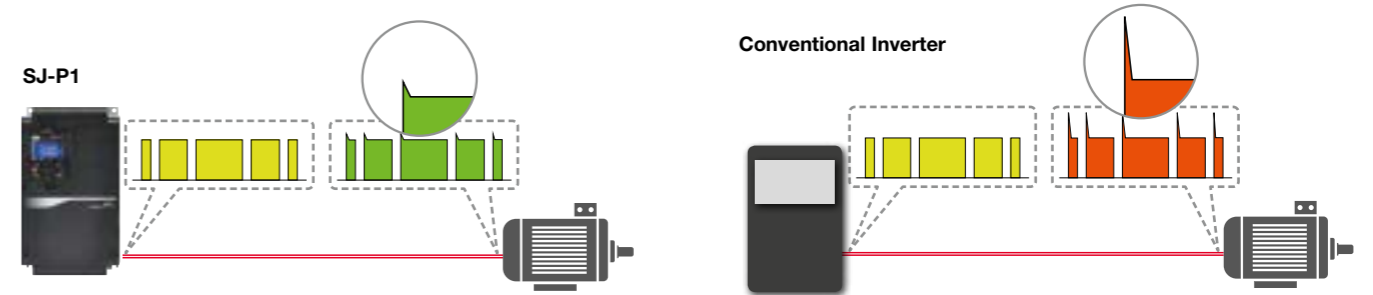
Certified "functional safety" international standard

- STO as functional safety standard
- Also in compliance EN61508, IEC / EN / UL61800-5-2 SIL3
- IEC61508, IEC / EN / UL61800-5-2, IEC / EN62061 SIL3 STO

and many more...

Micro surge voltage suppress function

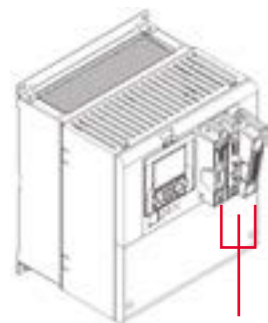
Hitachi original PWM control method limits motor terminal voltage to less than twice inverter DC bus voltage. This system significantly protects the life of the electric motor.



Special Functions

Gain mapping function (decreasing overshoot and undershoot contributes to smooth and stabilized operation with less shock)

Induction motor & permanent magnet motor can be controlled with one inverter series



3 Option slots



Option slots

Hitachi original cassette option for flexible use.

- Up to 3 options can be used simultaneously
- Easy access from the inverter front
- Various fieldbus and I/O options available

Option modules

- Ethernet
- EtherCAT
- Profibus-DB
- PROFINET
- Feedback
- Safety
- Analog input and output
- Relay output

Technical Information

KW (HP)	0,4 (1/2)	0,75 (1)	1,5 (2)	2,2 (3)	4 (5)	5,5 (7,5)	7,5 (10)	11 (15)	15 (20)	18,5 (25)	22 (30)	30 (40)	37 (50)	45 (60)	55 (75)	75 (100)	90 (125)	110 (150)	132 (175)	160 (220)	185 (250)	220 (300)
3-phase 200V class	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
3-phase 400V class		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

HX Series

The new Hitachi HX series PAC Controller combines powerful features and efficiency to meet the demands of a global supply chain in manufacturing industries.

Next generation industrial controllers that respond to IoT trends

HIGHLIGHTS

- Supports OPC-UA, an interface for connecting information with industries
- Supports information communications (Ethernet) and control communications (EtherCAT)
- Supports data logging for sites using SD memory
- Integrates sequence control with motion control, achieving high performance
- Supports programming languages compatible with IEC 61131-3: (LD, IL FBD, ST, SFC) + CFC
- Supports data logging using SD memory
- Sensor and actuator control (Various sensors and actuators including Hitachi inverters)
- OPC-UA for communication with higher level information systems
ERP linkage, MES connection, SCADA system connection, etc.
- Supports information communications
Ethernet (TCP/IP), IP communications, web support, etc.
- Connection with various control equipment and HMI
- Field network support (Partially combined use with dedicated master modules)

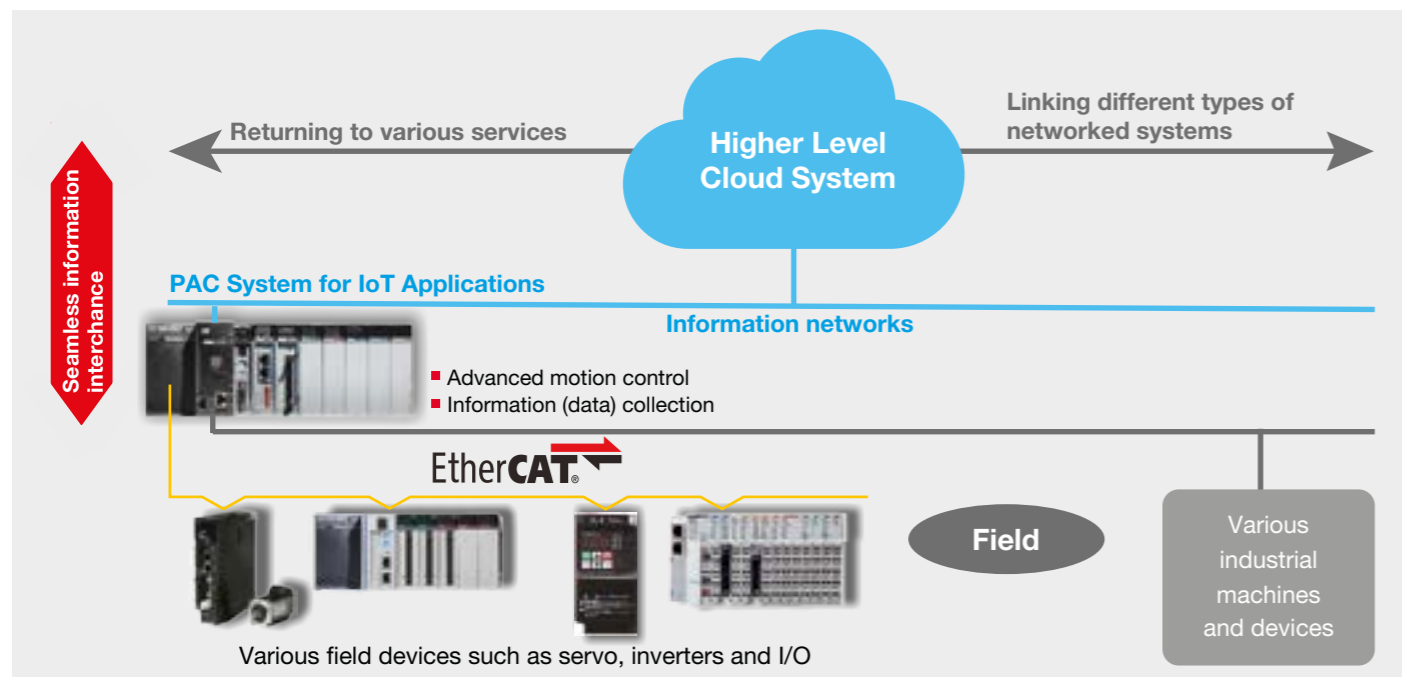


Programming languages according to IEC 61131-3: (LD, IL FBD, ST, SFC) + CFC:

- Ladder Logic Diagram (LD)
- Function Block Diagram (FBD)
- Structured Text (ST)
- Instruction List (IL)
- Sequential Function Chart (SFC)
- Continuous Function Chart (CFC)

Technical Information

Type	Hardware Specifications					Functional features			
Standard Model HX-CP1S08	Program data memory 8 MB	Ethernet port 2	USB Host, device			EtherCAT master			
Full Function Model HX-CP1H16	Program data memory 16 MB	Ethernet port 3	USB Host, device	SD card	Serial comm. RS-485	EtherCAT master	Web Visualization		
Motion Model HX-CP1S08M	Program data memory 8 MB	Ethernet port 2	USB Host, device			EtherCAT master		Soft Motion	
CNC Motion Model HX-CP1H16M	Program data memory 16 MB	Ethernet port 3	USB Host, device	SD card	Serial comm. RS-485	EtherCAT master	Web Visualization	Soft Motion	CNC g codes
Hybrid Model HX-CP1H16	Program data memory 16 MB	Ethernet port 3	USB Host, device	SD card	Serial comm. RS-485	EtherCAT master	Web Visualization		C/C++ program
Redundant Model HX-CP1H16R	Program data memory 16 MB	Ethernet port 3	USB Host, device	SD card	Serial comm. RS-485	EtherCAT master	CPU Redundancy		



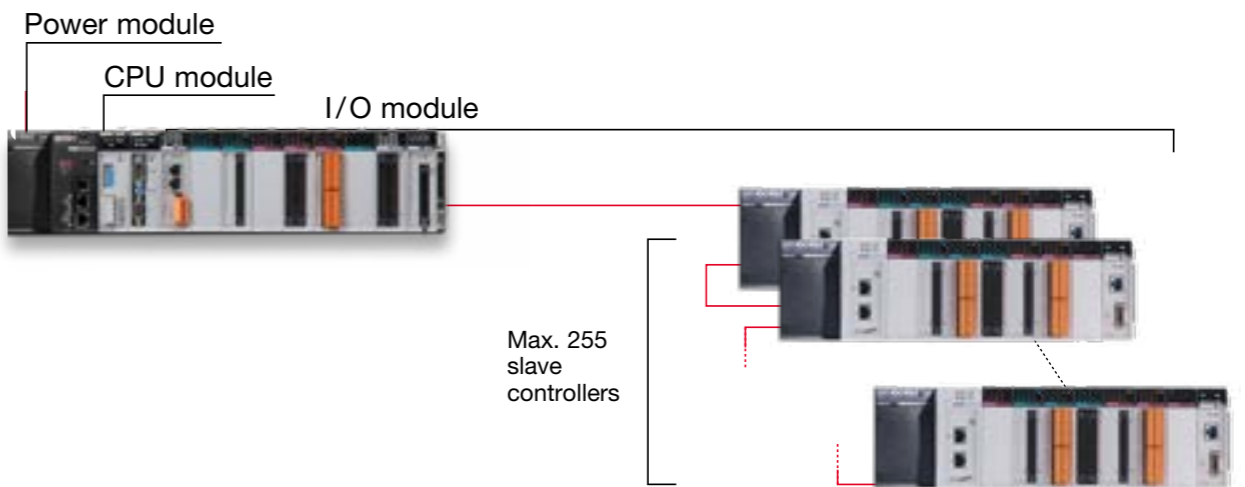
EHV+ Series

Core of the new powerful general purpose EHV+ CPU series is the CODESYS V3 runtime system. The result is an open and flexible system which is completed through various Hitachi IO modules.



HIGHLIGHTS

- Open standards PLC controller fully compliant with IEC61131-3, PLCopen and OPC DA
- Programming flexibility due to built-in Ethernet, USB and serial interface
- Offers wide range of fieldbus protocols like EtherCAT master and Profibus-DP master functionality
- Easy & efficient programming by using Hitachi & user specific library's led to reduced programming time
- Expansion modules allows a flexible structure by adding local and remote I/O
- Integrated display that allows for enhanced diagnostics and troubleshooting
- Enables fast and convenient debugging/testing during commissioning



Communication interfaces

- Ethernet (10BASE-T/100BASE-TX)
- USB interface (Ver. 2.0 Full speed 12 Mbps)
- Serial interface (RS-232C/RS-422/RS-485)

Communication protocols

- Modbus TCP Client/Server
- Modbus RTU Master
- EtherCAT Master

Programming

- Communication protocol CODESYS V3
- Programming languages according to IEC 61131-3: (LD, IL, FBD, ST, SFC) + CFC

Technical Information

Type	EHV-CPU1025	EHV-CPU1102
Processing Speed	80 ns / instruction	
Memory	User program (RAM)	2048 kByte
	Boot project (FLASH)	2048 kByte
	Source File (FLASH)	5 MByte
	Data memory	256 kByte
	Retain data memory	16 kByte
Support expansion bases	5	

Micro EHV+ Series

Hitachi's PLC series MICRO-EHV+ is an all-in-one type compact PLC, packed with powerful functions. It offers easy start-up for users with no experience with PLC as well as for users of other manufacturers or even high-level programming languages.

All-In-One Compact Type PLC

HIGHLIGHTS

Memory Capacity

- User program (RAM) up to 1024 kB
- Boot project (FLASH) up to 1024 kB
- Source file (FLASH) up to 1024 kB
- Data memory 640 kB

Programming

- Communication protocol CODESYS V3.5
- Programming languages according to IEC 61131-3: (LD, IL, FBD, ST, SFC) + CFC

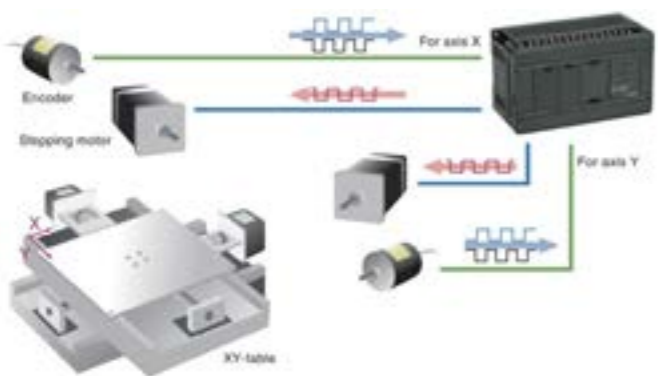
Communication Interfaces

- Ethernet (10BASE-T/100BASE-TX)
- USB interface (ver. 2.0, full speed 12 Mbps)
- Serial interface (RS-232C)

Communication Protocols

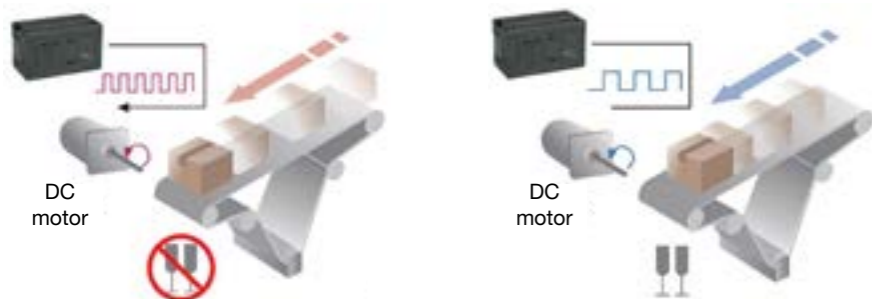
- Modbus TCP Client / Server
- Modbus RTU Master / Slave
- EtherCAT Master

Position control



Using the High-speed counter and pulse train output a simple position control system can be achieved without the need for a dedicated motion controller.

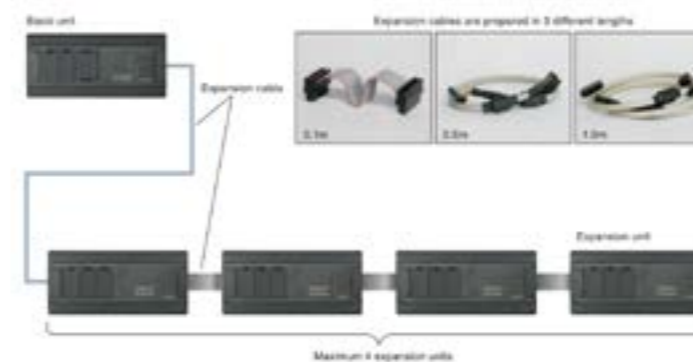
Speed control using PWM output



Speed control can be achieved without a dedicated speed control unit.



No. of I/O is max. 320 (using 64 pts expansion unit)



Wide range of expansion units are available.

Technical Information

Type	MV-A20DR	MV-D20DR	MV-D20DTPS	MV-A40DR	MV-D40DR	MV-D40DTPS	MV-A64DR	MV-D64DR	MV-D64DTPS
Power Supply	100 / 240 V AC	24 V DC		100 / 240 V AC	24 V DC		100 / 240 V AC	24 V DC	
Number of Inputs (DI)	12			24			40		
Input Specification	DC input (24 V DC)								
Number of output (DO)	8			16			24		
Output Specification	Relay	Transistor		Relay	Transistor		Relay	Transistor	

Human Machine Interface

Operating can not get any easier. Hitachi offers a wide range of operator interfaces which allow you to choose the best solution for your application.

EH-TP500



EH-TP500 is Hitachi's high performance touch screen series with innovative mechanical and metal enclosure.

HIGHLIGHTS

- 4.3" – 15" Touchscreen
- High performance touch screen with innovative IP 65 mechanical and metal enclosure
- Support of OPC UA protocol to meet future IoT demands
- HighCustomized for all Hitachi PLCs and inverters. Drives for Siemens S5/S7 is also included
- Gateway function, remote installation of application and remote assistance
- Multi-language programming
- Internal memory up to 256 MB Flash, 256 MB DDR
- Supported Protocols: Hi-Protocol Ethernet, CODESYS Ethernet, Modbus TCP, Modbus RTU, CANopen, Profibus-DP, DeviceNet and more
- Interfaces: Ethernet, USB, serial ports and MPI integrated
- Programmable with HiMobile Studio



Technical Information

Type	EH-TP504	EH-TP507	EH-TP510	EH-TP513	EH-TP515
Display	4.3" TFT 16:9 WQVGA	7" TFT 16:9 WVGA	10,4" TFT 16:9 SVGA	13,3" TFT 16:9 WXGA	15" TFT 16:9 XGA
Resolution	480 × 272	800 × 480	800 × 600	1280 × 800	1024 × 768

EH-TPS



The EH-TPS is designed for budget critical applications.

HIGHLIGHTS

- Display Size 4.3", 7" and 10.1"
- Widescreen Display
- Resistive Touchscreen
- Brilliant Display with LED Backlight
- Programmable with HiMobile Studio
- Ethernet, USB and Serial Port
- Lightweight and Low-power Design
- Highly reliable, Industrial Grade Components
- CE, cULus approval

Type	EH-TPS04	EH-TPS07	EH-TPS10
Display	4.3" TFT 16:9 WQVGA	7" TFT 16:9 WVGA	10,1" TFT 16:9 WSVGA
Resolution	480 × 272	800 × 480	1024 × 600

EH-RIO2 Series

The EH-RIO2 series of Remote I/O modules allows you the flexibility to distribute I/O throughout your application. Using EH-RIO2, you can precisely plan and expand your I/O and locate them right where they are needed: close to the sensors and actors.



HIGHLIGHTS

A proximity which pays back: By mounting I/Os in a junction box directly on or near the machine, you minimize wiring and eliminate the need for further control and cabinets. This solution benefits today's modular production processes and is especially advantageous when upgrading centralized automation systems.

- Fieldbus adapters for PROFINET, EtherCAT, Modbus TCP / RTU, Profibus-DP, DeviceNet
- Separation of electronics module and terminal block for easy installation and maintenance
- Spring clamp terminals on connection wiring
- Large selection of I / O Modules
- Super slim design 16 I / O = 12 mm
- Standard DIN rail mounting

Expansion Modules



Design Concept

Each I/O assembly consists of the following two components:
 1. The I/O modules convert field device signals to control status indicators
 2. The removeable terminal block provides 8 separate terminal locations for your field wiring.



Mounting

The I/O modules are mounted on a standard DIN rail, providing easy installation by vertically inserting the modules, without using any additional tools.



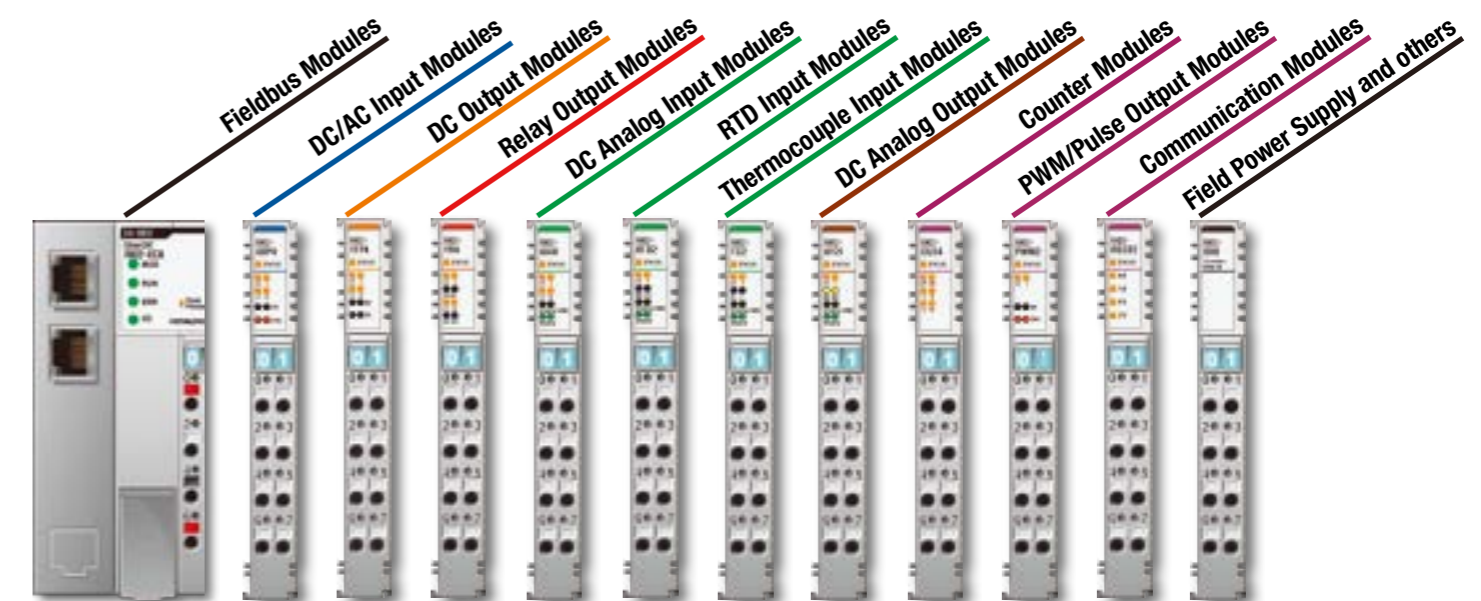
Easy Maintenance

Thanks to the incorporated unlock latch, it is possible to remove and replace individual I/O modules without ressambling the complete EH-RIO2 station.



Ease of use

The I/O Modules are equipped by default with the removable terminal block, so the module can be used out-of-the-box without the need of additional accessories.





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